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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JOSE ENRIQUE MALDONADO PACHECO, ANN LOUISE MCCORMACK, CHARLES HERMAN ELLISON, TIMOTHY RAY MARTIN, WING-CHAK NG, PRASAD SHRIKRISHNA POTNIS, and JASON SYBREN FAIRBANKS

Appeal 2009-009494
Application 10/743,245
Technology Center 1700

Before ADRIENE LEPIANE HANLON, CATHERINE Q. TIMM, and JEFFREY T. SMITH, *Administrative Patent Judges.*

TIMM, *Administrative Patent Judge.*

DECISION ON APPEAL[1]

I. STATEMENT OF CASE

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[1] The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the "MAIL DATE" (paper delivery mode) or the "NOTIFICATION DATE" (electronic delivery mode) shown on the PTOL-90A cover letter attached to this decision.

Appellants appeal under 35 U.S.C. § 134 from the Examiner's decision to reject claims 1-20. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

Appellants' invention relates to a method of producing a laminate material by incrementally stretching a flexible sheet material and joining the stretched material to another flexible sheet material (Spec. 2:8-10). Incremental stretching is accomplished by passing the flexible sheet between successive nips, each nip having mating fins and grooves that provide a different amount of stretch (Spec. 2:30-32). The stretching forces may be gradually increased so that there is a reduced tendency to tear or otherwise damage the flexible sheet (which can be a nonwoven material, polymeric film, or laminate) (Spec. 13:21-32 and 15:19-28). Claim 1 is illustrative:

> 1. A method of producing a laminate material comprising the steps of
>
> a. providing a first flexible sheet material;
>
> b. providing a second flexible sheet material having a first surface and a second surface;
>
> c. providing a forming surface having grooves formed therein;
>
> d. providing a plurality of mating surfaces having fins positioned to fit within the grooves of said forming surfaces;
>
> e. forming successive nips between the forming surface and the mating surfaces wherein the fins of the mating surfaces enter the grooves of the forming surface at separate locations on the forming surface;
>
> f. feeding said first flexible sheet material into the successive nips while maintaining the position of said first flexible sheet material with respect to said forming surface;
>
> g. stretching said first flexible sheet material a plurality of times along lines on the first flexible sheet material by the fins

entering the forming surface grooves along with said first flexible sheet material within successive nips;

h. applying adhesive directly to said stretched first flexible sheet material with a slot coat adhesive process; and

i. joining the stretched first flexible sheet material in a face to face configuration to the first surface of the second flexible sheet material.

The Examiner maintains, and Appellants seek review of, the following rejections:

1. The final rejection of claims 1-11 and 13-20 under 35 U.S.C. § 103(a) as being unpatentable over Dobrin et al (US 6,383,431 B1, issued May 7, 2002) in view of Weber et al (US 5,143,679, issued Sep. 1, 1992) and Boger et al (US 4,874,451, issued Oct. 17, 1989).

2. The final rejection of claim 12 under 35 U.S.C. § 103(a) as being unpatentable over Dobrin et al, Weber et al and Boger et al, as applied to claim 1, and further in view of Morman et al (US 2002/0119288A1, pub. Aug. 29, 2002).

With respect to the first rejection, Appellants argue claims 14-20 as a separate group. We select claims 1 and 14 as representative for deciding the issues with respect to the first rejection.

II. DISCUSSION

A. REJECTION OVER DOBRIN, WEBER, AND BOGER

1. CLAIM 1

The Examiner finds that, based on the teachings in Weber, there is a suggestion to stretch the nonwoven web of Dobrin with multiple intermeshing roll pairs to reduce the strain on Dobrin's web as it is stretched

and to cause less damage to the web (Ans. 4). The Examiner also finds that, based on the teachings in Boger, there is a suggestion to use slot adhesive coating to apply adhesive to bond the nonwoven web to the breathable film of Dobrin as such slot coating applicators were known in the art for accurate placement of adhesive with a relatively simple system requiring little maintenance (Ans. 4).

Appellants contend that, because of various differences between the method and apparatus of Dobrin and that of Weber, the Examiner's suggestion for using multiple roll pairs in the method of Dobrin is not supported by the prior art (Br. 11-15). Appellants further contend that Weber's fins and grooves do not meet the claim requirements (Br. 15). Moreover, Appellants contend that Dobrin's inventors were aware of the disclosure of the Weber reference and yet Dobrin failed to appreciate the desirability of the successive nip arrangement in Dobrin's invention (Br. 17-18).

Appellants also take issue with the Examiner's combination of Dobrin with Boger to show that it would have been obvious to use a slot coat adhesive process in the lamination process of Dobrin (Br. 19-22).

The resulting issues are:

(1) Does the evidence as a whole support the Examiner's finding that there is a suggestion within the prior art to carry out the stretching desired by Dobrin using multiple pairs of meshing rolls having "mating surfaces having fins positioned to fit within the grooves of said forming surfaces" as required by claim 1; and

(2) Does the evidence as a whole support the Examiner's finding that the prior art provides a suggestion to use a slot coat adhesive process to apply adhesive to bond the laminate of Dobrin?

We answer both questions in the affirmative. We adopt the thorough fact findings, analysis, and response to arguments advanced by the Examiner in the Answer. We add the following primarily for emphasis.

Dobrin describes a method of forming a liquid-impervious, breathable backsheet for a disposable absorbent article having a soft, cloth-like, outermost surface. The backsheet includes a modified nonwoven material joined to a breathable film. The process involves modifying a nonwoven web between forming rolls having intermeshed teeth and grooves and joining the modified nonwoven web to a breathable film made porous by stretching a precursor film having incompatible inorganic material dispersed therein between another set of similar intermeshing forming rolls. After joining, the resulting composite may be passed through another set of intermeshing forming rolls similar to the first two sets. (Dobrin, col. 3, l. 7 to col. 4, l. 15; Fig. 18; col. 17, l. 47 to col. 18, l. 11.)

Figure 2 of Dobrin illustrates the forming rolls used to modify the nonwoven material. The intermeshed teeth and grooves are spaced and shaped to locally stretch the nonwoven web in the cross-web direction (Dobrin, col. 8, ll. 25-30; Figs. 2-5). The outermost tips of the teeth are preferably rounded to avoid cuts or tears (Dobrin, col. 7, ll. 52-55). In this process, it is possible to control the web width and basis weight by selecting a suitable forming roll tooth and groove configuration, suitable machine

direction tension, and choosing to apply additional cross direction tension (Dobrin, col. 9, ll. 29-37).

Figure 3 of Appellants depicts fins and grooves used to stretch Appellants' nonwoven (Fig. 3). Those fins and grooves are depicted similarly to the teeth and grooves of Dobrin and serve to stretch or extend the nonwoven material in the cross-web direction similar to Dobrin (Spec. 15:10-12).

Given the similarity between the structure and purpose of the teeth and grooves of Dobrin and the fins and grooves of Appellants' invention, we find that the teeth of Dobrin are "fins" positioned to fit within grooves of the forming surfaces as required by claim 1.

Dobrin contemplates successively modifying the nonwoven web "by passing the web through successive sets of forming rolls, tensioning and, if desired, additional cross-web direction stretching." (Dobrin, col. 13, ll. 13-17.)

Weber relates to a method for sequentially stretching a "zero strain" stretch laminate, i.e., a laminate web comprised of at least two plies secured together while in a substantially untensioned ("zero-strain") condition, (Weber, col. 1, ll. 61-67).

Weber states that

> While "zero-strain" stretch laminate webs per se are generally known in the art as is the use of meshing corrugated rolls to incrementally stretch such "zero-strain" stretch laminate webs to impart elasticity thereto, the present Applicant has discovered that for some "zero strain" stretch laminate webs there is a tendency for the corrugated rolls to cause damage to the webs, particularly when relatively high degrees of incremental stretching are involved.

(Weber, col. 9, ll. 9-17.)

> Weber solves the problem by:
>
> sequentially stretching the "zero-strain" stretch laminate portions of the web during the incremental stretching process. In a particularly preferred embodiment, the mechanical stretching operation is carried out in stages by passing said laminate web between multiple pairs of meshing corrugated rolls, each pair of rolls exhibiting a greater degree of meshing than the preceding pair, to sequentially stretch said web while minimizing damage thereto. The use of multiple roll pairs with progressively greater degrees of meshing imposes a lower strain rate on the web than would be the case for a single pair of meshing corrugated rolls having an amplitude and degree of meshing comparable to the final pair of multiple rolls. In addition, the temporary release of tension from the web as it passes between the successive roll pairs allows some degree of stress redistribution to occur in the web prior to the web's being incrementally stretched to a greater degree by each succeeding roll pair. Minimizing the strain rate and allowing a degree of stress redistribution in the foregoing manner minimizes the tendency to cause damage to the web.

(Weber, col. 9, ll. 20-45.)

"The test for combining references is not what the individual references themselves suggest but rather what the combination of disclosures taken as a whole would suggest to one of ordinary skill in the art." *In re McLaughlin*, 443 F.2d 1392, 1395 (CCPA 1971). "A person of ordinary skill is also a person of ordinary creativity, not an automaton." *KSR*, 550 U.S. 398, 421. Therefore, in the obviousness analysis, the inferences and creative steps that the ordinary artisan would employ must be taken into account. *Id.* at 418.

Taking into account the skill of the ordinary artisan as evidenced by the prior art, we cannot agree with Appellants that the differences between the method and apparatus of Dobrin and that of Weber somehow negate the obviousness of using Weber's sequential stretching to reduce strain and prevent breaking in the stretching process of Dobrin. Dobrin's process involves stretching the web by straining the web between the teeth and grooves of rolls. As a result strain will occur between the rolls and damage can occur. Dobrin acknowledges this fact. Dobrin states that, "[f]or example, a first set of forming rolls can serve to increase the elongation capability of the nonwoven web without causing shredding of the web into 'pieces' or 'strips,' and a second set of forming rolls can serve to expand the web in the X-Y plane." (Dobrin, col. 13, ll. 17-21.)

Given that stretching occurs in the process of Dobrin, one of ordinary skill in the art would understand that the multiple roll pairs of Weber would solve the problem of damage caused by stretching, especially high degrees of stretching. One of the ways in which a claim's subject matter can be proved obvious is by establishing that there existed at the time of invention a known problem for which there was an obvious solution encompassed by the claims. *KSR Int'l v. Teleflex Inc.*, 550 U.S. 398, 419-20 (2007). Weber solves a known problem that would have been encountered by the ordinary artisan implementing Dobrin's process at certain levels of stretching.

The evidence as a whole supports the Examiner's finding that there is a suggestion within the prior art to carry out the stretching desired by Dobrin using multiple pairs of meshing rolls having the "mating surfaces having fins

positioned to fit within the grooves of said forming surfaces" as required by claim 1.

Turning to the second issue, we further determine that the evidence supports the Examiner's finding of a suggestion to use slot adhesive coating to apply adhesive in the process of Dobrin.

Dobrin requires that the modified nonwoven web be joined to the breathable film to form the backsheet product. Dobrin does not particularly limit the joining operation, and suggests joining by applying adhesive and pressing the materials together (Dobrin, col. 21, ll. 22-25 and ll. 47-54). So that the micropores of the breathable backing sheet film are not all filled, Dobrin prefers to apply the adhesive in a discontinuous pattern (Dobrin, col. 21, ll. 54-60).

Boger slot coats rows of adhesive onto a moisture impervious backing sheet of a diaper so as to adhere the backing sheet to the nonwoven pad of the diaper (Boger, col. 1, ll. 23-29 and col. 2, ll. 17-32).

For the reasons provided by the Examiner, and in view of the skill in the art demonstrated by the prior art as a whole, we agree with the Examiner that using the known slot coating process for its known function of discontinuously coating adhesive onto a substrate to allow bonding between a nonwoven and film would have been obvious to one of ordinary skill in the art (Ans. 11-13).

The evidence as a whole supports the Examiner's finding that the prior art provides a suggestion to use a slot coat adhesive process to apply adhesive to bond the laminate of Dobrin.

2. CLAIM 14

Claim 14 further requires that, in accordance with claim 13, the first flexible sheet material, after stretching, have a corrugated surface, and that the adhesive be applied substantially to the peaks of the corrugations.

Appellants further contend that Boger's substrate is flat, not corrugated, and Boger is not concerned with application of adhesive only on the peaks of corrugations (Br. 21-22).

The Examiner responds that applying adhesive to a corrugated web would not appear to require any more skill than applying adhesive to an uncorrugated web other than a determination of the precise locations to which the adhesive should be applied, and Boger applies adhesive to precise locations in the transverse direction (Ans. 12). Based on the Examiner's reasoning, we agree that one of ordinary skill in the art would have appreciated that a slot coating device would be useful for applying adhesive to webs in rows such as along the peaks of the corrugations of Dobrin, given that Dobrin's rows of corrugations are spaced similarly to the adhesive application rows of Boger.

B. REJECTION OF CLAIM 12 ADDING MORMAN

Claim 12 further requires that the method of claim 1 include "the step of stretching the second flexible sheet material in the machine direction before it is joined to the stretched first flexible sheet material."

The Examiner concludes that it would have been obvious to one of ordinary skill in the art to stretch Dobrin's second web in the machine direction to create breathability as machine direction stretching is an obvious alternative to the cross direction stretching Dobrin suggests for creating

breathability, such machine direction stretching being well known in the art as exemplified by Morman (Ans. 6).

Appellants contend that machine direction stretching has other negative effects such as necking and the Examiner must show why persons of ordinary skill would ignore these other effects and resort to stretching in the machine direction (Br. 22-23).

The issue is: Does the evidence as a whole and the law support the Examiner's conclusion that it would have been obvious to select the admittedly known process of machine direction stretching to create the breathability desired by Dobrin?

We answer this question in the affirmative.

The prior art indicates that both machine direction stretching and cross direction stretching were known in the art for imparting the necessary micropores for breathability (Dobrin, col. 20, ll. 20-37 (cross direction stretching); Morman ¶ [0011] (machine direction stretching)).

It was also known in the art that machine direction stretching results in necking (Morman, ¶ [0011]), and that one can control the width and basis weight of a web by stretching in the machine direction (Dobrin, col. 9, ll. 9-24).

Because machine direction stretching was known to create the micropores desired by Dobrin, it would have been obvious to use that known method instead of the cross direction stretching taught by Dobrin. Those of ordinary skill would have obtained a predictable result of necking in so stretching. The choice of stretching type would have been dependent on the level of necking desired or tolerated in the process. Even if machine

direction stretching were less desirable than cross direction stretching in the process, it remains that both stretching processes where known to accomplish the desired breathability.

It is well settled that, "in a section 103 inquiry, 'the fact that a specific [embodiment] is taught to be preferred is not controlling, since all disclosures of the prior art, including unpreferred embodiments, must be considered.'" *Merck & Co. v. Biocraft Labs., Inc.,* 874 F.2d 804, 807 (Fed. Cir. 1989) (quoting *In re Lamberti*, 545 F.2d 747, 750 (CCPA 1976)). Therefore, even if machine direction stretching were less preferred, it would have been obvious to use it because it was known to accomplish the desired result.

The evidence as a whole and the law support the Examiner's conclusion that it would have been obvious to select the admittedly known process of machine direction stretching to create the breathability desired by Dobrin.

III. CONCLUSION

On the record before us, we sustain the rejections maintained by the Examiner.

IV. DECISION

The decision of the Examiner is affirmed.

V. TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED

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